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GB 1212833

GB 1182926

GB 1111128

GB 1050990

GB 1036137

GB 863005

GB 861374

GB 655143

GB 547838

GB 139112

- (58) Field of search
E1B

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(54) Floor or wall facing tile

(57) This invention relates to a constructional element such as a tile which is to be secured to a substrate using a layer of adhesive such as cement. To improve the bonding and retention of the element it is provided with a structure on one face which

allows the adhesive to penetrate into a re-entrant formation. Examples of such structures are dove-tail section grooves (12) or holes (13), a hollow portion (15) of the element, studs (16) or a corrugated mesh (17). The adhesive setting partly behind these structures gives a particularly firm bond.

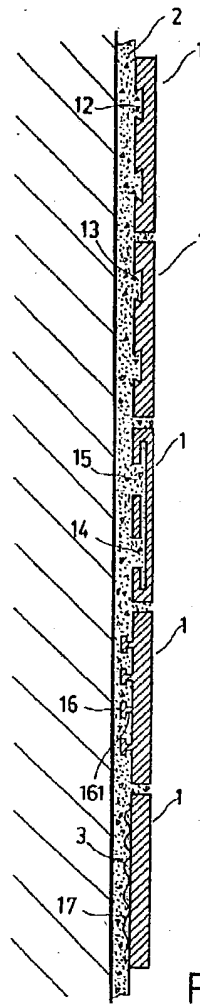


Fig. 6

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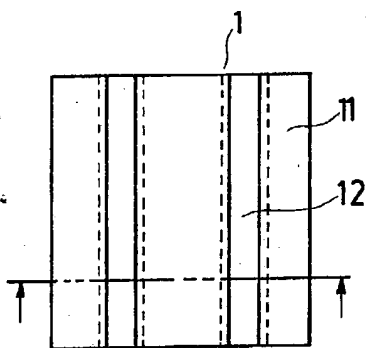


Fig. 1

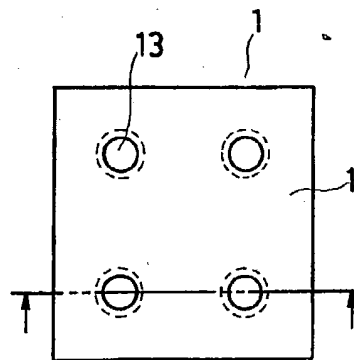


Fig. 2

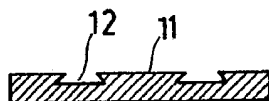


Fig. 1-A

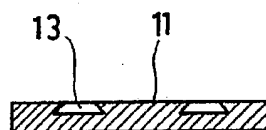


Fig. 2-A

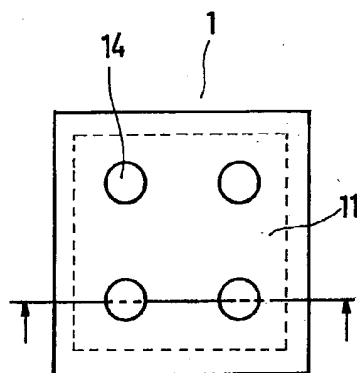


Fig. 3

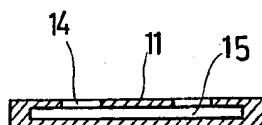


Fig. 3-A

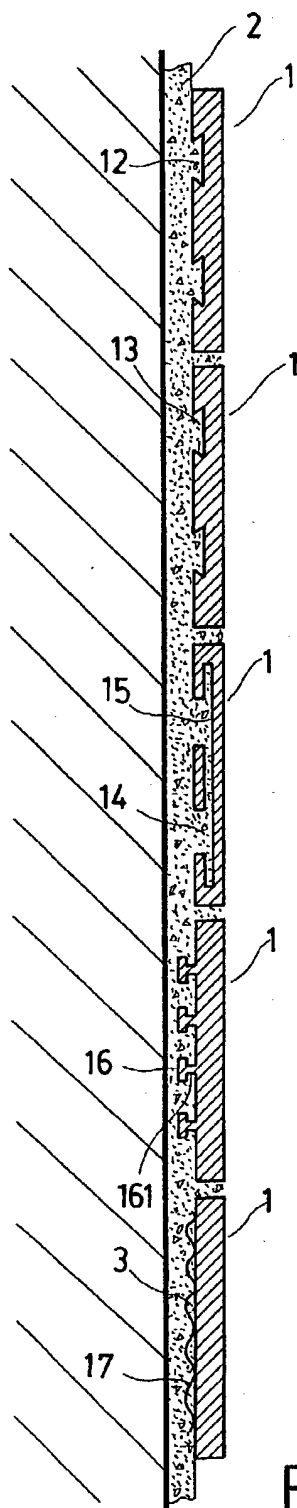


Fig. 6

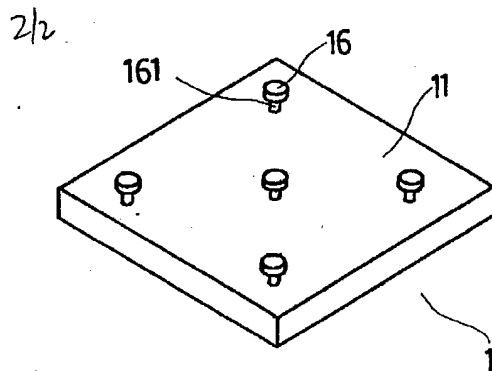


Fig. 4

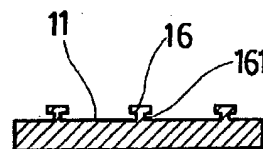


Fig 4-A

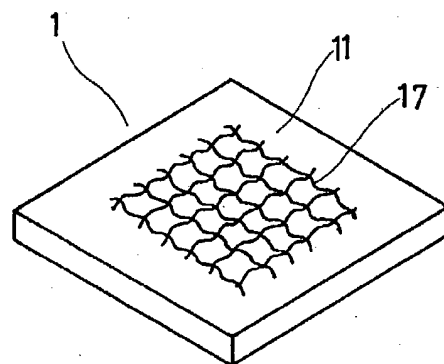


Fig. 5

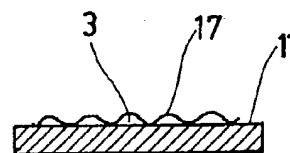


Fig 5-A

SPECIFICATION Construction element

This invention relates to construction elements, particularly for decorative cladding. The appearance of the buildings or the houses is desired to be as decorative and beautiful as possible. In conventional building techniques decorative construction elements are adhered to the ceiling, the wall or the floor of the building, and these may offer a rich variety of colouring and patterning. Unfortunately, the side of the elements which is to be adhered has been a flat surface, and there have been difficulties in achieving a permanent bond, especially when using cement as the adhesive agent. In view of the above problem, it has been proposed to roughen the face of this construction element in order to increase the adhesion of a cement, but the adhesion has still been insufficient.

This invention has been devised to provide a construction element with a strong adhesion, to solve the problem outlined above. The face of the element which is to be bonded to the substrate (hereinafter for convenience called "the adhesive face") is formed in such a way that a bonding material such as a cement passes into a re-entrant formation on that face. Thus, when the bonding material sets the element is positively locked to the substrate by hardened material which has passed behind a portion of the structural element.

Various embodiments will now be described with reference to the drawings, wherein:

Fig. 1 is a face view and Fig. 1A a sectional view of a construction element with tenon grooves in its adhesive face,

Fig. 2 is a face view and Fig. 2A is a sectional view of a construction element made with inwardly widening holes in its adhesive face,

Fig. 3 is a face view and Fig. 3A is a sectional view of a construction element of which the inner part is hollow and on its adhesive face there are holes passing through to the hollow portion,

Fig. 4 is a perspective view and Fig. 4A is a sectional view of a construction element having protuberance on its adhesive face,

Fig. 5 is a perspective view and Fig. 5A is a sectional view of a construction element for which there is a corrugated mesh fixed on its adhesive face, and

Fig. 6 is a section showing various embodiments of element bonded to a wall.

In each embodiment the construction element is a tile (1) which is to be adhered by a layer of cement to a substrate, such as a wall.

As shown in Fig. 1 on the adhesive face 11 of the tile some tenon grooves 12 are made. These are gradually enlarged inwards from their mouth to their base to form a dove tail shape as seen in Fig. 1A. Then when we adhere the tile to the wall or the floor painted with the adhesive agent 2, one push on the construction material 1 will make the adhesive agent 2 fill back into the tenon grooves 12, and after the adhesive agent 2 has set, the dove-tailed section tenon grooves 12 will hold the

dried concrete adhesive agent 2 which has passed behind their overshot lips making the tile 1 unable to be parted from the wall (as shown in Fig. 6).

As shown in Fig. 2, some holes 13 of any suitable shape (e.g circular or square) are made on the adhesive face 11 or the tile 1. As in Fig. 2A, these holes 13 are gradually enlarged inwards from their mouth to their base to offer a re-entrant formation for the adhesive, in the same way as did tenon grooves 12. (This embodiment is also seen in Fig. 6.)

Fig. 3 shows that the tile 1 is hollow at 15, and there are some holes 14 passing through to the hollow portion on the adhesive face 11 of the tile. When this tile is pushed to adhere to the wall or the floor painted with an adhesive agent, the adhesive agent can enter into the hollow portion 15 through the holes 14. The holes themselves need not be inwardly divergent since the hollow has the function of holding the dried concrete adhesive agent in the same manner as the undercut grooves and holes of the previous embodiments, making the tile unable to be parted from its substrate.

Construction element of this invention can also be embodied with some protuberances 16 on the adhesive face 11, see Fig. 4. As Figs. 4 and 4A indicate, the protuberances 16 are connected or fixed to the adhesive face 11 by a neck 16, narrower than their head. Therefore, when this kind of construction element is adhered to a wall, floor or ceiling painted with a cement as adhesive agent, the protuberances 16 of this construction element will be inserted into the cement which can pass behind the overhanging edges of the head portion. When the cement is set the construction element will be tightly secured to the wall.

Moreover, on the adhesive face 11 of the construction element, there can be fixed a mesh of various corrugated strips or ribs in a criss-cross network, as indicated in Fig. 6, with gap 3 formed under the protruding parts of the corrugated strips 17. When the construction element 1 is adhered to a wall with a cement layer 2 applied to it, the cement will pass behind the protruding parts to fill the gap 3. Thus, the corrugated strips 3 will be set into the cement, making the construction material 1 tightly adhere to the wall (as also indicated in Fig. 6).

CLAIMS

1. A construction element one face of which is to be secured to a substrate by a bonding material, which is formed in such a way that there is at least one re-entrant formation on the said face.

2. A construction element according to claim 1, wherein the formation is an undercut tenon groove.

3. A construction element according to claim 1, wherein the formation is a hole in the surface, the hole being wider at its base within the material than at its mouth.

4. A construction element according to claim 3,

wherein the walls of the hole diverge continuously.

5 A construction element according to claim 1, wherein the formation is a hole in the said face leading to a hollow interior of the element.

6. A construction element according to claim 3, claim 4 or claim 5, wherein the hole is circular or square in outline.

10 7. A construction element according to claim 1, wherein the formation is a protuberance on the

surface.

8. A construction element according to claim 7, wherein the protuberance is stud-shaped.

15 9. A construction element according to claim 7, wherein the protuberance is part of a corrugated rib or strip, with a gap between the parts and the said face.

20 10. A construction element according to claim 9, wherein there is a criss-cross arrangement of ribs or strips.

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